Material Sent for Data Extraction

Reg. # 100-1528

Description: CSF Notification per PRN 98-10

☒ Material(s) Sent to Data Extraction Contractors:

- ☐ New Stamped Label Dated _____
- ☐ Notification Dated _____
- ☒ New CSFs Dated 6/5/2014
- ☐ Other: _____

☐ Decision #: 492092

☐ Other Action/Comments: _____

File this coversheet and attached materials in the jacket. It must be well organized and clipped together, NOT STAPLED. Then give the jacket with the coversheet and materials to staff in the Information Services Center (ISC) (Room S-4900). If a jacket is full or only available as an image, please file materials in a new jacket and bring it down to the (ISC). For further information please call 703-605-0716.

Reviewer: Julie Chao

Phone: 308-8735 Division: RD/IRB

Date: June 30, 2014

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

June 30, 2014

Mr. Patrick McCain
Syngenta Crop Protection
P.O. Box 18300
Greensboro, NC 27419

Subject: CSF Notification per PRN 98-10 – Correcting the EPA Registration Number for the technical source on the Basic CSF and Alternate CSF #1
Product Name: Helix Vibrance
EPA Registration Number: 100-1528
Application Date: June 5, 2014
Decision Number: 492092

Dear Mr. McCain:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the actions requested fall within the scope of PRN 98-10.

The CSFs submitted with your application have been stamped "Notification" and placed in our files. Please note that the record for this product currently contains the following CSFs:

- Basic CSF (CSF 1647/2) dated June 5, 2014
- Alternate CSF #1 (CSF 1648/2) dated June 5, 2014

Any previously dated CSFs are superseded. If you have any questions, please contact Julie Chao at (703) 308-8735 or by email at chao.julie@epa.gov.

Sincerely,

Venus Eagle

Venus Eagle, Product Manager 01
Insecticide-Rodenticide Branch
Registration Division (7505P)
Office of Pesticide Programs
Date: June 30, 2014

Please read instructions on reverse b ompleting form.

United States
Environmental Protection Agency
Washington, DC 20460

☐ Registration
☐ Amendment
☒ Other

OPP Identifier Number
NOTIFICATION

Application for Pesticide - Section I

1. Company/Product Number	2. EPA Product Manager	3. Proposed Classification
100-1528	Ms. Venus Eagle	☐ None ☐ Restricted
4. Company/Product (Name)	PM#	
Helix® Vibrance®	Team # 1	
5. Name and Address of Applicant *(Include ZIP Code)* Syngenta Crop Protection, LLC P. O. Box 18300 Greensboro, NC 27419 ☐ *Check if this is a new address*	6. **Expedited Review.** In accordance with FIFRA Section 3(c)(3) (b)(i), my product is similar or identical in composition and labeling to: EPA Reg. No. _____ Product Name _____	

Section - II

☐ Amendment - Explain below.
☐ Resubmission in response to Agency letter dated _____
☒ Notification - Explain below.
☐ Final printed labels in response to Agency letter dated
☐ "Me Too" Application.
☐ Other - Explain below.

NOTIFICATION
JUN 3 0 2014

Explanation: Use additional page(s) if necessary. (For Section I and Section II.).

Syngenta Crop Protection, LLC is herein submitting a notification to update Confidential Statements of Formula (CSF) for Helix® Vibrance® (EPA REG. No. 100-1528).

This notification is consistent with the provisions of PR Notice 98-10 and EPA regulations at 40 CFR 152.46, and no other changes have been made to the labeling or the confidential statement of formula of this product. I understand that it is a violation of 18 U.S.C. Sec. 1001 to willfully make any false statement to EPA. I further understand that if this notification is not consistent with the terms of PR Notice 98-10 and 40 CFR 152.46, this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA.

Section – III

1. Material This Product Will Be Packaged In:

Child-Resistant Packaging	Unit Packaging		Water Soluble Packaging		2. Type of Container
☐ Yes* ☐ No	☐ Yes ☐ No		☐ Yes ☐ No		☐ Metal ☐ Plastic ☐ Glass ☐ Paper ☐ Other (Specify) _____
***Certification must be submitted**	If "Yes" Unit Packaging wgt.	No. per Container	If "Yes" Unit Packaging wgt.	No. per container	

3. Location of Net Contents Information	4. Size(s) Retail Container	5. Location of Label Directions
☐ Label ☐ Container		☐ On Label ☐ On Labeling accompanying product

6. Manner in Which Label is Affixed to Product ☐ Lithograph ☐ Paper glued ☐ Stenciled ☐ Other _____

Section – IV

1. Contact Point *(Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)*

Name	Title	Telephone No. (Include Area Code)
Patrick McCain	Sr. Regulatory Product Manager	336-632-7317

Certification

I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

6. Date Application Received **(Stamped)**

2. Signature	3. Title	
Patrick McCain	Sr. Regulatory Product Manager, Seed Care	
4. Typed Name	5. Date	
Patrick McCain	6/5/2014	E-SUBMISSION

EPA Form 8570-1 (Rev. 8-94) Previous editions are obsolete.

*** Claimed confidential by submitter***

Material Sent for Data Extraction

Reg. # 100-1528

Description: New Product Registration

☒ Material(s) Sent to Data Extraction Contractors:

- ☒ New Stamped Label Dated 6/3/2014
- ☐ Notification Dated _____
- ☒ New CSFs Dated 8/5/2013
- ☐ Other: _____

☐ Decision #: 483944

☐ Other Action/Comments: _____

File this coversheet and attached materials in the jacket. It must be well organized and clipped together, NOT STAPLED. Then give the jacket with the coversheet and materials to staff in the Information Services Center (ISC) (Room S-4900). If a jacket is full or only available as an image, please file materials in a new jacket and bring it down to the (ISC). For further information please call 703-605-0716.

Reviewer: Julie Chao

Phone: 308-8735 Division: RD/IRB

Date: June 3, 2014

2. Make the following label changes before you release the product for shipment:

    - Revise the EPA Registration Number to read, "EPA Reg. No 100-1528."

3. Submit one copy of the final printed label for the record before you release the product for shipment.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records. Please also note that the record for this product currently contains the following CSFs:

- Basic CSF (1647/1), dated 8/5/13
- Alternate CSF #1 (1648/1), dated 8/5/13

If you have any questions, please contact Julie Chao at 703-308-8735 or chao.julie@epa.gov.

Venus Eagle
Product Manager 01
Insecticide-Rodenticide Branch
Registration Division (7505P)

Enclosure

(Booklet)

GROUP	4A	INSECTICIDE

GROUP	3	4	7	12	FUNGICIDES

Helix® Vibrance®

Insecticide with Fungicides

A seed treatment product for control of certain insects and diseases of canola.

For use in commercial seed treatment facilities with closed transfer systems only.

Active Ingredients:	
Thiamethoxam[1]	20.7%
Difenoconazole[2]	1.25%
Mefenoxam[3]	0.40%
Fludioxonil[4]	0.13%
Sedaxane[5]	0.26%
Other Ingredients:	77.26%
Total:	100.00%

[1]CAS No. 153719-23-4
[2]CAS No. 119446-68-3
[3]CAS Nos. 70630-17-0 and 69516-34-3
[4]CAS No. 131341-86-1
[5]CAS No. 874967-67-6

Helix® Vibrance® contains the following amounts of active ingredient per gallon: 2.25 lbs. thiamethoxam; 0.14 lbs. difenoconazole; 0.04 lbs. mefenoxam; 0.01 lbs. fludioxonil, 0.03 lbs. sedaxane.

KEEP OUT OF REACH OF CHILDREN.

CAUTION

See additional precautionary statements and directions for use in booklet [on label].

EPA Reg. No. 100-

EPA Est. xxxxx

SCP XXXX

Net Contents

ACCEPTED
06/03/2014
Under the Federal Insecticide, Fungicide and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 100-1528

FIRST AID	
If swallowed	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by the poison control center or doctor. • Do not give anything by mouth to an unconscious person.
HOT LINE NUMBER For 24-Hour Medical Emergency Assistance (Human or Animal) Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident), Call **1-800-888-8372**	

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

CAUTION

Harmful if swallowed. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

Personal Protective Equipment

Workers involved in treating, cleanup, or maintenance of seed treatment equipment must wear:

- Coveralls worn over long-sleeved shirt and long pants
- Socks and shoes
- Chemical-resistant gloves made of any waterproof material (e.g.,-polyvinyl chloride [PVC], nitrile rubber or butyl rubber, barrier laminate, neoprene rubber, natural rubber, polyethylene, or Viton®)

Baggers, sewers, and stackers must wear:

- Coveralls worn over long-sleeved shirt and long pants
- Socks and shoes
- Chemical-resistant gloves made of any waterproof material (e.g.,-polyvinyl chloride [PVC], nitrile rubber or butyl rubber, barrier laminate, neoprene rubber, natural rubber, polyethylene, or Viton®)

Forklift operators

- Coveralls worn over long-sleeved shirt and long pants.
- Socks and shoes

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions exist for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticides get inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Environmental Hazards

This pesticide is toxic to wildlife, freshwater and estuarine/marine fish and highly toxic to aquatic invertebrates. Runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Exposed treated seed may be hazardous to wildlife. Do not contaminate water when disposing of equipment wash water or rinsate.

Pollinator Precautions:
Thiamethoxam is highly toxic to bees, and effects are possible as a result of exposure to translocated residues in blooming crops.

If treated seed is spilled outdoors or in areas accessible to birds, promptly clean up or bury to prevent ingestion.

Ground Water Advisory

Thiamethoxam has properties and characteristics associated with chemicals detected in ground water. This chemical may leach into the ground water if used in areas where soils are permeable, particularly where the water table is shallow..

Mefenoxam is known to leach through soil into ground water under certain conditions as a result of agricultural use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination.

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

NOTICE: Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, LLC or Seller. To the extent permitted by applicable law, Buyer and User agree to hold SYNGENTA and Seller harmless for any claims relating to such factors.

SYNGENTA warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. To the extent permitted by applicable law: (1) this warranty does not extend to the use of the product contrary to label instructions or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and (2) Buyer and User assume the risk of any such use. To the extent permitted by applicable law, SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS WARRANTED BY THIS LABEL.

To the extent permitted by applicable law, in no event shall SYNGENTA be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitation of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Not for use on agricultural establishments in hopper-box, planter-box, slurry-box, or other seed-treatment applications at or immediately before planting.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

FAILURE TO FOLLOW THE DIRECTIONS FOR USE AND PRECAUTIONS ON THIS LABEL MAY RESULT IN CROP INJURY, POOR INSECT AND/OR DISEASE CONTROL, AND/OR ILLEGAL RESIDUES.

Treatment of highly mechanically scarred or damaged seed, or seed known to be of low vigor and poor quality, except for the purpose of curative control of existing disease pests, may result in reduced germination and/or reduction of seed and seedling vigor. Treat a small quantity of seed using equipment similar to that planned for treating the total seed lot. Conduct germination tests on a small portion of seed before committing the total seed lot to a selected seed treatment. Due to seed quality and seed storage conditions beyond the control of Syngenta, no claims are made to guarantee the germination of carry-over seed or propagating material for all crop seed.

PRODUCT INFORMATION

Helix Vibrance is a seed treatment product that contains both insecticide and fungicide components with activity against certain early season insects, and seed borne and damping off diseases of canola. Thiamethoxam, the insecticide component, provides activity against aphids, flea beetles, seedcorn maggot, white grubs, and wireworms. The remaining components are fungicides with activity against diseases caused by *Alternaria* species, *Pythium* species, *Fusarium* species, *Rhizoctonia* species, and seed-borne blackleg (*Leptosphaeria maculans*).

MIXING PROCEDURES

Important: Always re-circulate Helix Vibrance thoroughly before using.

Apply utilizing standard slurry seed treatment equipment which provides uniform seed coverage. Uneven or incomplete seed coverage may not give the desired level of insect or disease control. Consult the manufacturer of the application equipment you plan to use for suitability for this application and for instructions on operation and calibration of the equipment. Allow seed to dry before bagging.

Helix Vibrance contains an EPA approved dye/colorant that imparts an unnatural color to the seed as required by the Federal Seed Act.

Helix Vibrance has a density of approximately 10.85 pounds per gallon.

SEED BAG LABEL REQUIREMENTS

The Federal Seed Act requires that bags containing treated seeds shall be labeled with the following statements:

- This seed has been treated with thiamethoxam insecticide and fludioxonil, difenoconazole, mefenoxam, and sedaxane fungicides.
- Do not use for feed, food, or oil purposes.
- User is responsible for ensuring that the seed bag meets all requirements under the Federal Seed Act.

In addition, the U.S. Environmental Protection Agency requires the following statements on bags containing seeds treated with Helix Vibrance:

- Ground Water Advisory:
  Thiamethoxam has properties and characteristics associated with chemicals detected in ground water. This chemical may leach into the ground water if used in areas where soils are permeable, particularly where the water table is shallow.
  Mefenoxam is known to leach through soil into ground water under certain conditions as a result of agricultural use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination.
- Pollinator Precautions:
  Thiamethoxam is highly toxic to bees, and effects are possible as a result of exposure to translocated residues in blooming crops.
- Excess treated seed may be used for ethanol production only if (1) by-products are not used for livestock feed and (2) no measurable residues of pesticide remain in the ethanol by- products that are used in agronomic practice.
- Do not allow children, pets, or livestock to have access to treated seed.
- Store away from feeds and foodstuffs.

- Wear long-sleeved shirt, long pants and chemical resistant gloves when handling treated seed.
- Treated seeds exposed on soil surface may be hazardous to wildlife. Cover or collect treated seeds spilled during loading.
- Treated seed must be planted into the soil at a depth greater than 1/2 inch.
- Dispose of all excess treated seed. Leftover treated seed may be doublesown around the headland or buried away from water sources in accordance with local requirements.
- Do not contaminate water bodies when disposing of planting equipment wash waters.
- Dispose of seed packaging in accordance with local requirements.
- For seed treated with Helix Vibrance, do not graze or feed livestock on treated areas for 45 days after planting.
- In the event of a crop failure or harvest of a crop grown from Helix Vibrance treated seed, the field may be replanted immediately to canola, soybean, barley, oat, rye, triticale and wheat, sweet corn, and chickpea.
- Alfalfa, *Brassica* (cole) leafy vegetables, buckwheat, corn, pearl millet, proso millet, popcorn, rice (dry-seeded), sorghum, teosinte, wild rice, cotton, cucurbit vegetables, dry bulb onions, fruiting vegetables, leafy vegetables, legume vegetables, mint (peppermint and spearmint), oil seed crops (black mustard seed, borage seed, crambe seed, field mustard seed, flax seed, Indian mustard seed, Indian rapeseed seed, peanuts, rapeseed seed, and safflower seed), root vegetables, strawberry, sunflowers, tobacco, and tuberous and corm vegetables may be planted 30 days from the date the Helix Vibrance treated seed was planted.
- For any other crop, the minimum plant back interval is 120 days from the date the Helix Vibrance treated seed was planted. A cover crop other than the crops listed above that is planted for erosion control or soil improvement may be planted sooner than the 120 day interval; however, the crop may not be grazed or harvested for food or feed.
- Do not use at a rate that will result in more than 0.05 lb thiamethoxam per acre (22.7 grams ai/A) per year as a seed treatment application.
- This seed has been treated with 0.01 mg ai thiamethoxam per seed.
- Do not make any soil or foliar applications containing thiamethoxam to crops grown from seed treated with Helix Vibrance.

CROP USE PRECAUTIONS

Resistance Management
Helix Vibrance contains sedaxane, a Group 7 fungicide, thiamethoxam, a Group 4A insecticide; mefenoxam, a Group 4 fungicide, fludioxonil, a Group 12 fungicide and difenoconazole, a Group 3 fungicide.

Some disease organisms and insect pests are known to develop resistance to products after repeated use. Because resistance development cannot be predicted, the use of this product should conform to sound resistance management strategies established for the crop and use area. Syngenta encourages responsible product stewardship to ensure effective long-term control of the insects on this label.

Mefenoxam, difenconazole, sedaxane and fludioxonil have specific modes of action and could be subject to development of insensitive strains of fungi. Development of insensitivity cannot be predicted. Therefore, Syngenta cannot assume liability for crop damage resulting from insensitive strains of fungi. Consult with your State Agricultural Experiment Station or Extension Service Specialist for guidance and ways to control any possible mefenoxam insensitive strains of fungi which may occur.
If resistance to this product develops in your area, this product, or other products with a similar mode of action, may not provide adequate control. If poor performance cannot be attributed to improper application or extreme weather conditions, a resistant strain of insect may be present. If you experience difficulty with control and resistance is a reasonable cause, immediately consult your local company representative or agricultural advisor for the best alternative method of control for your area.

Helix Vibrance contains a Group 4A insecticide (thiamethoxam, belonging to the neonicotinoid class of chemistry). Insect biotypes with acquired or inherent resistance to Group 4A insecticides may eventually dominate the insect population if Group 4A insecticides are used repeatedly as the predominant method of control for targeted species. This may result in partial or total loss of control of those species by thiamethoxam or other Group 4A insecticides.

In order to maintain susceptibility to this class of chemistry:

- Avoid using Group 4A insecticides exclusively for season long control of insect species with more than one generation per crop season.
- For insect species with successive or overlapping generations, apply [brand name] or other Group 4A insecticides using a "treatment window" approach. A treatment window is a period of time as defined by the stage of crop development and/or the biology of the pests of concern. Within the treatment window, depending on the length of residual activity, there may either be single or consecutive applications (seed treatment, soil, foliar, unless otherwise stated in the Directions for Use) of the Group 4A insecticides. When using Helix Vibrance seed treatment in the first treatment window rotate to effective products with a different mode of action in the

subsequent treatment window before making additional applications of Group 4A insecticides.
- A treatment window rotation, along with other IPM practices for the crop and use area, is considered an effective strategy for preventing or delaying a pest's ability to develop resistance to this class of chemistry.
- If resistance is suspected, do not apply Helix Vibrance or any other Group 4A insecticides.

Other Insect Resistance Management (IRM) practices include:
- Incorporating IPM techniques into your insect control program.
- Monitoring treated insect populations for loss of field efficacy.
- Using tank-mixtures or premixes with insecticides from a different target site of action group as long as the involved products are all registered for the same crop outlet and effective rates are applied.

For additional information on Insect Resistance Management:
- Contact your local extension specialist, certified crop advisor and/or product manufacturer for additional insect resistance management recommendations.
- Visit the Insecticide Resistance Action Committee (IRAC) on the web at: http://www.irac-online.org/.

Consult your local pest control advisor or extension office for additional methods for preventing resistance development. Syngenta encourages responsible product stewardship to ensure effective long term control of the fungal and insect pests on this label.

CROP USE DIRECTIONS

Canola

To provide early season protection against aphids, flea beetles, seedcorn maggot, white grubs, wireworms, seed-borne blackleg (*Leptosphaeria maculans*), seed-borne *Alternaria*, and the seedling disease complex (damping-off, seedling blight, seed rot, and root rot) caused by *Pythium* species, *Fusarium* species, and *Rhizoctonia* species, apply Helix Vibrance at 23 fluid ounces of product per 100 pounds of seed.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage and disposal.

Pesticide Storage
Store in original containers only. Keep container closed when not in use. Do not store near food or feed. In case of spill on floor or paved surfaces, mop and remove to chemical waste storage area until proper disposal can be made if product cannot be used according to the label.

Pesticide Disposal
Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative of the nearest EPA Regional Office for guidance.

Container Handling [less than 5 gallons]
Non-refillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use and disposal. Drain for 10 seconds after the flow beings to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Container Handling [greater than 5 gallons]
Non-refillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several ties. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Container Handling [greater than 5 gallons]
Refillable container. Refill this container with pesticide only. Do not use this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean container before final disposal, empty the remaining contents from

this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

CONTAINER IS NOT SAFE FOR FOOD, FEED OR DRINKING WATER.

For non-emergency (e.g., current product information) call
Syngenta Crop Protection at 1-800-334-9481.

Manufactured for:
Syngenta Crop Protection, Inc.
P.O. Box 18300
Greensboro, North Carolina 27419-8300
SCP 935-MAS 0909

(Non-detachable Container Label)

GROUP	4A	INSECTICIDE

GROUP	3	4	7	12	FUNGICIDES

Helix® Vibrance®

Insecticide with Fungicides

A seed treatment product for control of certain insects and diseases of canola.

For use in commercial seed treatment facilities with closed transfer systems only.

Active Ingredients:	
Thiamethoxam[1]	20.7%
Difenoconazole[2]:	1.25%
Mefenoxam[3]:	0.40%
Fludioxonil[4]:	0.13%
Sedaxane[5]	0.26%
Other Ingredients:	77.26%
Total:	100.00%

[1]CAS No. 153719-23-4
[2]CAS No. 119446-68-3
[3]CAS Nos. 70630-17-0 and 69516-34-3
[4]CAS No. 131341-86-1
[5]CAS No. 874967-67-6

Helix® Vibrance® contains the following amounts of active ingredient per gallon: 2.25 lbs. thiamethoxam; 0.14 lbs. difenoconazole; 0.04 lbs. mefenoxam; 0.01 lbs. fludioxonil, 0.03 lbs. sedaxane.

KEEP OUT OF REACH OF CHILDREN.

CAUTION

See additional precautionary statements and directions for use in booklet.

EPA Reg. No. 100-

EPA Est. xxxxx

SCP XXXX

Net Contents

FIRST AID	
If swallowed	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by the poison control center or doctor. • Do not give anything by mouth to an unconscious person.
HOT LINE NUMBER For 24-Hour Medical Emergency Assistance (Human or Animal) Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident), Call **1-800-888-8372**	

Hazards to Humans and Domestic Animals

CAUTION

Harmful if swallowed. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

Environmental Hazards

This pesticide is toxic to wildlife, freshwater and estuarine/marine fish and highly toxic to aquatic invertebrates. Runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Exposed treated seed may be hazardous to wildlife. Do not contaminate water when disposing of equipment wash water or rinsate.

Pollinator Precautions:
Thiamethoxam is highly toxic to bees, and effects are possible as a result of exposure to translocated residues in blooming crops.

If treated seed is spilled outdoors or in areas accessible to birds, promptly clean up or bury to prevent ingestion.

Ground Water Advisory

Thiamethoxam has properties and characteristics associated with chemicals detected in ground water. This chemical may leach into the ground water if used in areas where soils are permeable, particularly where the water table is shallow.

Mefenoxam is known to leach through soil into ground water under certain conditions as a result of agricultural use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage and disposal.

Pesticide Storage
Store in original containers only. Keep container closed when not in use. Do not store near food or feed. In case of spill on floor or paved surfaces, mop and remove to chemical waste storage area until proper disposal can be made if product cannot be used according to the label.

Pesticide Disposal
Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative of the nearest EPA Regional Office for guidance.

Container Handling [less than 5 gallons]
Non-refillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use and disposal. Drain for 10 seconds after the flow beings to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Container Handling [greater than 5 gallons]
Non-refillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several ties. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Container Handling [greater than 5 gallons]
Refillable container. Refill this container with pesticide only. Do not use this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean container before final disposal, empty the remaining contents from

this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

CONTAINER IS NOT SAFE FOR FOOD, FEED OR DRINKING WATER.

Manufactured for:
Syngenta Crop Protection, LLC.
P.O. Box 18300
Greensboro, North Carolina 27419-8300

SCP XXXX

Chao, Julie

From: patrick.mccain@syngenta.com
Sent: Friday, May 30, 2014 1:39 PM
To: Chao, Julie
Cc: david.tuck@syngenta.com
Subject: RE: 100-RLEI: Label Comments McCain response 5-30-14
Attachments: 000100-XXXXXB.20130906.HELIXVIBRANCE_NEW_SEP2013 Ver B-CL.PDF; 000100-XXXXXB.20130906.HELIXVIBRANCE_NEW_SEP2013 Ver B-HI.PDF

Thanks for the reminder Julie. My apologies for the tardy reply. Nonetheless, here is the revised label for 100-RLEI (clean and highlighted) to incorporate your proposed changes below. Please note, I did revise the pollinator precaution restrictions to be consistent with the other Cruiser products we have, as well. Please let me know if you have any questions or concerns.

Thanks,
Pat

From: Chao, Julie [mailto:Chao.Julie@epa.gov]
Sent: Friday, May 30, 2014 7:08 AM
To: Mccain Patrick USGR
Cc: Tuck David USGR
Subject: FW: 100-RLEI: Label Comments

Hi Pat,

This is a friendly reminder to please submit a revised label for 100-RLEI (Helix Vibrance).

Thanks,
Julie

++++++++++++++++++++++++++
Julie Chao
703.308-8735 (phone)
703.305.6920 (fax)
http://www.epa.gov/pesticides

From: Chao, Julie
Sent: Wednesday, May 21, 2014 10:47 AM
To: 'patrick.mccain@syngenta.com'
Cc: david.tuck@syngenta.com
Subject: 100-RLEI: Label Comments

Hi Pat,

Below are my comments on the label for 100-RLEI. As with 100-RLET, the pollinator precautions can be revised to match what is currently approved on other thiamethoxam labels, which is based on the most recently completed risk assessments. Let me know if you have any questions. Otherwise, if you could send the revised label by May 30, that would be great.

1. Under the PPE section, you do . .eed to list the selection category. It is sut. .t to list the materials. (Per the Label Review Manual).

2. Please add a User Safety Recommendations box to the label. (Although not required for non-WPS products, the Agency typically requests this for commercial use products).

3. Under the Pollinator Precautions section, add the following statement: "Thiamethoxam is highly toxic to bees, and effects are possible as a result of exposure to translocated residues in blooming crops."

4. On page 6, under the Pollinator Precaution on the seed bag, add "Thiamethoxam is highly toxic to bees, and effects are possible as a result of exposure to translocated residues in blooming crops."

Thanks,
Julie

++++++++++++++++++++++++++
Julie Chao
703.308-8735 (phone)
703.305.6920 (fax)
http://www.epa.gov/pesticides

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY AND POLLUTION PREVENTION
OFFICE OF PESTICIDE PROGRAMS REGISTRATION DIVISION (7505P)

DP BARCODE No.: 416369; **FILE SYMBOL No.**: 100-RLEI; **PRODUCT NAME**: Helix Vibrance; **DECISION No.**:483944; **PC Code(s)**: 060109, 128847, 113502, 071503, 129223; **ACTION CODE**: R314; **FOOD Use**: Yes

DATE OUT: May 12, 2014

SUBJECT: End Use Product Chemistry Review
Product Name: Helix Vibrance

FROM: Shyam Mathur, Ph. D
Product Chemistry Team Leader
Technical Review Branch/RD (7505P)

TO: Julie Chao / Venus Eagle, RM 01
Insecticide-Rodenticide Branch / RD (7505P)

Company Name: Syngenta Crop protection LLC
Formulation Type: Commercial Seed treatment product (facilities with closed transfer systems only) with Fungicide & Insecticides

INTRODUCTION:

The registrant has submitted an application to register the new end use product Helix Vibrance. Originally this product was planned as Work share with PMRA, but later on it was decided that each Agency will do its own product chemistry reviews. The registrant has submitted a CSF for basic formulation (1647/1) and an alternate CSF (1648/1) (both dated 08-05-2013). In support of the basic & alternate CSF, the registrant has submitted the product chemistry group A and group B data with MRID Nos. 491201-01 to -03, -05,- 06 & -07. The registrant has also submitted a proposed product label. TRB has been asked to determine the acceptability of the proposed basic and alternate CSF's and the supporting product chemistry data.

SUMMARY OF FINDINGS:

1. Name of Active Ingredient(s): Thiamethoxam (20.%), Difenoconazole (1.25%), Mefenoxam (0.40%), Fludioxonil (0.13%) and Sedaxane (0.26%).

2. Has the registrant claimed substantial similarity to a registered product?

[ ] Yes; [X] No; [ ] NA; if yes, give the registration number of the cited product.

Reg. No.

3. All of the source materials of the active ingredient are derived from registered sources: [X] Yes [ ] No

4. All inert ingredients have been screened by IIAB and found to be approved for the proposed labeled Uses: [X] Yes; [ ] No

5. Confidential Statement of Formula(s):

   [X] Proposed Basic - Dated: 08-05-2013; Resubmitted – Dated:

   [X] Proposed Alternate CSF – Dated: 08-05-2013; Resubmitted – Dated:

   Alternate CSF(s) complies with 40CFR§152.43: [X] Yes; [ ] No; [ ] NA

6. Product label

   a. Ingredient statement: Nominal concentration of AI listed on CSF(s) concurs with product label (PR Notice 91-2).
   [X] Yes; [ ] No; if not, explain below:

   Is the sub statement in compliance with PR Notice 97-6 (inert ingredient vs other ingredient)
   [X] Yes; [ ] No; if not, explain below:

Metallic equivalent:	[ ] Yes	[X] NA
Soluble arsenic:	[ ] Yes	[X] NA
Isomeric ratios:	[ ] Yes	[X] NA
Acid Equivalent:	[ ] Yes	[X] NA;

   b. Health related sub statements: Product contains?

Petroleum distillate at > 10%:	[ ] Yes	[X] No	[ ] NA
Methanol at > 4%:	[ ] Yes	[X] No	[ ] NA
Sodium nitrate/Sodium Nitrite	[ ] Yes	[X] No	[ ] NA

   c. Physical chemical hazard statement: Product label requires a statement per 40 CFR §156.78 for flammability, explosive potential or electric insulator breakdown?
   [ ] Yes; [X] No

   Is the sub statement in compliance with PR Notice 98-6 (Total Release Fogger)?
   [ ] Yes; [ ] No; [X] NA; if not, explain below

   d. Label requires an additional Storage and Disposal statement:
   [ ] Yes; [X] No; if yes explain below:

7. Group **A**:

Guideline No.	Study Title		Data submitted		TRB's Assessment of Data	MRID Nos. Cited
			Yes	No		
830.1550	Product Identity & Composition		X		A	491201-01
830.1600	Description of materials used to produce the product		X		A	491201-01
830.1650	Description of formulation process		X		A	491201-01
830.1670	Discussion on the formation of impurities		X		A	491201-01
830.1700	Preliminary analysis			NA		
830.1750	Certified limits (158.350)	Standard certified limits	X		A	Basic CSF dated 08-05-2013. [redacted]
		Proposed Limits	X		A	[redacted]
		Justification for wider limits	X		A	
830.1800	Enforcement analytical method		X		A	491201-03 491201-06 491201-07

A = Acceptable, N = Not Acceptable, G = Data Gap, W = Waiver request, NA = Not applicable,
I = In progress; U = Upgradeable

Inert ingredient information may be entitled to confidential treatment

8. Group **B:**

Guideline No.	**Study Title**	**Value or Qualitative Description**	**TRB's Assessment of Data**	**MRID Nos.** cited
830.6303	Physical State	Liquid	A	491201-05
830.6314	Oxidation/reduction	Does not contain any oxidizing or reducing agents	A	491201-05
830.6315	Flammability	>104°C	A	491201-05
830.6316	Explodability	Not potentially explosive	A	491201-05
830.6317	Accelerated Storage stability	Stable for 2 weeks at 54°C when stored in HDPE containers. 1 year study is in progress	A	491201-05
830.6320	Corrosion characteristics	No corrosion was observed in HPDE containers when stored for 2 weeks at 54°C. 1 year study is in progress	A	491201-05
830.7000	pH	6.8 (1% aqueous solution)	A	491201-05
830.7100	Viscosity	750 mPas @ 20°C	A	491201-05
830.7300	Density	1.30 g/ml (10.8 lbs/gal) @ 20°C	A	491201-05

A = Acceptable, N = Not Acceptable, G = Data Gap, W = Waiver request, NA = Not applicable, I = In progress; U = Upgradeable.

C. CONCLUSIONS:

The TRB has reviewed the proposed basic and alternate CSF's and the supporting product chemistry data for the proposed end use product and has concluded:

1. The proposed CSF's for basic and alternate formulations (both dated 08-05-2013) are acceptable.

2. The submitted product chemistry data corresponding to the guidelines 830 series group A are acceptable.

3. The product chemistry data submitted for the guideline 830 series group B are acceptable. The accelerated studies for the guidelines 830.6317 (storage stability) and 830.6320 (corrosion characteristics) for test substance indicated it to be stable for 2 weeks in HDPE containers at 54°C. The studies are acceptable. The registrant has indicated that one year studies are in progress and the results will be submitted to the Agency.

DATA PACKAGE BEAN SHEET

Date: 27-Nov-2013

FEE

Decision #: 483944
DP #: (416369)
PRIA
Parent DP #:
Submission #: 941638
E-Sub #: 4781

R 314 # 32926

* * * Registration Information * * *

Registration: 100-RLEI - Helix Vibrance

Company: 100 - SYNGENTA CROP PROTECTION, LLC

Risk Manager: RM 01 - Venus Eagle - (703) 308-8045 Room# PY1 S-7913

Risk Manager Reviewer: Julie Chao JCHAO

Sent Date: PRIA Due Date: 16-Jun-2014 Edited Due Date:

Type of Registration: Product Registration - Section 3

Action Desc: (R314) NEW END USE PRODUCT CONTAINING TWO OR MORE REGISTERED ACTIVE IN

Ingredients: See page 3

* * * Data Package Information * * *

Expedite: ○ Yes ● No Date Sent: 27-Nov-2013 Due Back:

DP Ingredient: See page 3

DP Title: Product Chemistry

CSF Included: ● Yes ○ No Label Included: ● Yes ○ No Parent DP #:

Assigned To		Date In	Date Out
Organization:	RD / TRB		
Team Name:	CHEM		
Reviewer Name:	Shyam Mathur	5/6/14	5/12/14
Contractor Name:			

16-MAY-14

Last Possible Science Due Date: 16-Jun-2014

Science Due Date:

Sub Data Package Due Date:

wish April

* * * Studies Sent for Review * * *

Printed on Page 2

* * * Additional Data Package for this Decision * * *

No Additional Data Packages

* * * Data Package Instructions * * *

Please review the product chemistry data (MRIDs 49120101, 49120102, 49120103, 49120105, 49120106, and 49120107) submitted by Syngenta in support of 100-RLEI, a proposed canola seed treatment product containing thiamethoxam, difenoconazole, mefenoxam, fludioxonil, and sedexane. Copies of the cover letter, proposed label, and proposed CSFs (Basic, Alternate) are enclosed. The data are available in Documentum through e-submission # 4784. Please let me know if you need any additional information. Thanks.

DP#: (416369) *** Studies Sent for Review *** Decision#: (483944)

MRID	MRID Status	Citation Reference	Guideline	86-5 Status
49120101		Hipps, A. (2013) Thiamethoxam/Difenoconazole/Metalaxyl-M(Me A20477A/ Document J: Product Chemistry Volume. Project Number: TK0068469 PC.13.029. Unpublished study prepared by Syngenta Crop Protection, LLC. 23p.	830.7560/Partition coefficient (n-octanol/water), generator column method	Pass (06-Nov-2013)
49120102		Hipps, A. (2013) Thiamethoxam/ Difenoconazole/<etalaxyl-M (Mefenoxam)/ Fludioxonil/Sedaxane: A20477A- Document MIII, Section 1: Product Chemistry Volume. Project Number: TK0068469, PC/13/026. Unpublished study prepared by Syngenta Crop Protection, LLC. 33p.	830.7560/Partition coefficient (n-octanol/water), generator column method	Pass (01-Nov-2013)
49120103		Hipps, A. (2013) Thiamethoxam/Difenoconazole/Metalaxyl-M (Mefenoxam)/Fludioxonil/Sedaxane: A20477A Document MIII, Section 2: Product Chemistry Volume. Project Number: TK0068469, PC/13/027. Unpublished study prepared by Syngenta Crop Protection, LLC. 8p.	830.7560/Partition coefficient (n-octanol/water), generator column method	Pass (01-Nov-2013)
49120105		Hipps, A. (2013) Thiamethoxam/Difenoconazole/Metalaxyl-M (Mefenoxam)/Fludioxonil/Sedaxane: A20477A Physical and Chemical Properties: Product Chemistry Volume. Project Number: TK0068469, PC/13/028. Unpublished study prepared by Syngenta Crop Protection, LLC. 70p.	830.7560/Partition coefficient (n-octanol/water), generator column method	Pass (01-Nov-2013)
49120106		Sigmon, J. (2013) Thiamethoxam, Difenoconazole, Metalaxyl-M (Mefenoxam), Fludioxonil, Sedaxane Analytical Method SF-624/2 - Determination of CGA169374, CGA173506, CGA293343, SYN524464 in A20477A: Analytical Method. Project Number: TK0178972, 10528404, SF/624/2. Unpublished study prepared by Syngenta Crop Protection, LLC. 13p.	830.1800/Enforcement analytical method	Pass (06-Nov-2013)
49120107		Perine, S. (2013) Thiamethoxam, Difenoconazole, Metalaxyl-M (Mefenoxam), Fludioxonil, Sedaxane: A20477A - Validation of Analytical Method SF-624/2: Final Report. Project Number: TK0178972, 10527808, SF/624/2. Unpublished study prepared by Syngenta Crop Protection, LLC. 29p.	830.1800/Enforcement analytical method	Pass (06-Nov-2013)

DP#: (416369) *** [illegible] and Data Package Ingredients *** Decision#: (483944)

PC Code	CAS	Ingredient Name
129223	874967-67-6	Sedaxane
071503	131341-86-1	Fludioxonil
128847	119446-68-3	Difenoconazole
060109	153719-23-4	Thiamethoxam (1)
113502	70630-17-0	Metalaxyl-M
128847	119446-68-3	Difenoconazole(1.25%) (2)
060109	153719-23-4	Thiamethoxam(20.7%)
129223	874967-67-6	Sedaxane(.26%) (5)
071503	131341-86-1	Fludioxonil(.13%) (4)
113502	70630-17-0	Metalaxyl-M(.4%) (3) Mefenoxam.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

OFFICE OF PESTICIDE PROGRAMS
REGISTRATION DIVISION (7505P)

10/APR/2014

MEMORANDUM: Acute Toxicity Data Evaluation Record (DER) for Helix Vibrance (EPA/PMRA Worshare)

Subject:	Name of Pesticide Product:	Helix Vibrance
	EPA File Symbol:	100-RLEI
	DP Barcode:	D416370
	Decision No.:	483944
	Action Code:	R314
	PC Codes:	128847 Difenoconazole, 071503 Fludioxonil 060109 Thiamethoxam, 129223 Sedaxane 113502 Metalaxyl-M (Mefenoxam)

From: Tracy Keigwin, Biologist
Technical Review Branch
Registration Division (7505P)

Through: Bonaventure Akinlosotu, Ph.D
Technical Review Branch
Registration Division (7505P)

To: Julie Chao/Venus Eagle, RM Team 01
Insecticide Rodenticide Branch
Registration Division (7505P)

Applicant: Syngenta Crop Protection LLC
P.O. Box 18300
410 Swing Road
Greensboro, NC 27419-8300

FORMULATION FROM LABEL:

Active Ingredient(s):	% by wt.
Thiamethoxam	20.70
Difenoconazole	1.25
Mefenoxam	0.40
Fludioxonil	0.13
Sedaxane	0.26
Other Ingredient(s):	77.26
Total:	100.00%

BACKGROUND: Syngenta Crop Protection, LLC has submitted an application for the registration of EPA File Symbol 100-RLEI, Helix Vibrance. In support of their application the registrant has submitted the following acute toxicity studies: MRID Nos. 49120108 (870.1100), 49120109 (870.1200), 49120110 (870.1300), 49120111 (870.2400), 49120112 (870.2500) and 49120113 (870.2600). The product label states that Helix Vibrance is a seed treatment insecticide with fungicides for the control of certain insects and diseases in canola.

Note that this submission is part of a workshare effort between USEPA and Canada's PMRA.

GLP: All studies were conducted in accordance with GLP.

DEFICIENCIES: None

COMMENTS AND RECOMMENDATIONS:

1) The 6 submitted studies are acceptable. The acute toxicity profile and data summary for EPA File Symbol 100-RLEI, Helix Vibrance is as follows:

Type of Study	Tox Category	Species	Results	MRID
acute oral toxicity	III	Rat	LD_{50} = 3129 mg/kg bw	49120108
acute dermal toxicity	IV	Rat	LD_{50} > 5000 mg/kg bw	49120109
acute inhalation toxicity	IV	Rat	LC_{50} > 2.55 mg/L	49120110
primary skin irritation	IV	Rabbit	Non-irritating	49120111
primary eye irritation	IV	Rabbit	Minimally irritating	49120112
dermal sensitization (LLNA)	Negative	Mouse	Not a sensitizer	49120113

2) The product chemistry team must approve the proposed Basic CSF (dated 8-5-2013) before this action can be finalized.

3) The following are the precautionary and first aid statements for this product, as obtained from the Label Review System:

PRODUCT ID #: **100-RLEI (100-1528)**

PRODUCT NAME: Helix Vibrance

PRECAUTIONARY STATEMENTS

SIGNAL WORD: **CAUTION**

Hazards to Humans and Domestic Animals:

Harmful if swallowed. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse. Wear: Long-sleeved shirt and long pants, Socks, Shoes.

First Aid:

If swallowed:
-Call a poison control center or doctor immediately for treatment advice.
-Have person sip a glass of water if able to swallow.
-Do not induce vomiting unless told to by a poison control center or doctor.
-Do not give anything to an unconscious person.

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-xxx-xxxx for emergency medical treatment information.

USER SAFETY RECOMMENDATIONS:

User should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.

User should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Users should remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

DATA EVALUATION RECORD (OECD dossier format)

B.6.11 **Acute Toxicity of the Preparations** (OECD Annex IIIA 7.1; PMRA DACO 4.6)

B.6.11.1: **IIIA 7.1.1; 4.6.1**

Study type: Acute Oral Toxicity – Rat (Acute Toxic Class Method)

Guidelines: U.S. EPA - OPPTS 870.1100; OECD 425

Test Material: (Purity) Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/ Sedaxane FS (A20477A):

Difenoconazole: 1.27 (%wt/wt) or 16.5 g/L
Fludioxonil: 0.13 (%wt/wt) or 1.69 g/L
Thiamethoxam: 20.9 (%wt/wt) or 272 g/L
Metalaxyl-M: 0.41 (%wt/wt) or 5.34 g/L
Sedaxane: 0.26 (%wt/wt) or 3.39 g/L

Synonyms: Helix Vibrance

Citation: Durando, J. (2013) Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) - Acute Oral Toxicity Up and Down Procedure in Rats - Final Report: Project Number: TK0068401, 36005. Unpublished study prepared by Eurofins/Product Safety Laboratories. 19p. MRID 49120108

Sponsor: Syngenta Crop Protection, LLC
P.O. Box 18300, 410 Swing Road
Greensboro, NC 27419-8300

Compliance: Signed and dated GLP, Quality Assurance, and Data Confidentiality statements were provided.

EXECUTIVE SUMMARY

In an acute oral toxicity study (MRID 49120108), 9 fasted female 9-10 week old Sprague-Dawley derived, albino rats received a single oral gavage dose of Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) [Difenoconazole: 1.27 (%wt/wt) or 16.5 g/L; Fludioxonil: 0.13 (%wt/wt) or 1.69 g/L; Thiamethoxam: 20.9 (%wt/wt) or 272 g/L; Metalaxyl-M: 0.41 (%wt/wt) or

5.34 g/L; Sedaxane: 0.26 (%wt/wt) or 3.39; Blue liquid] using the Up and Down Procedure. The dose levels evaluated were 175 mg/kg bw (1 animal), 550 mg/kg bw (1 animal), 1750 mg/kg bw (3 animals), and 5000 mg/kg bw (4 animals). Animals were observed for clinical signs for several hours following dosing and daily for 14 days or until death. Animals were weighed prior to dosing and again on study day 7 and 14 or following death. Surviving animals were euthanized following the 14 day observation. Gross necropsies were conducted decedents and euthanized animals.

All animals survived the 175 and 550 mg/kg bw concentrations. No clinical abnormalities were observed at these dose levels. No abnormalities were observed at necropsy. All animals survived the 1750 mg/kg bw concentration. Two animals (2/3) exhibited irregular respiration, hypoactivity and/or hunched posture following dosing. Both recovered by study day 1. No gross abnormalities observed at necropsy at this dose level. At 5000 mg/kg bw all animals (4/4) died within one day of test substance administration. Clinical signs observed at this dose level included irregular respiration, hypoactivity and abnormal posture. At necropsy, decedents exhibited a discoloration of the intestines and/or a distended stomach filled with a blue fluid.

The acute median lethal oral dose (LD_{50}) of Difenoconazole/Fludioxonil/Thiamethoxam/ Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20307A) is estimated to be 3129 mg/kg bw in female rats. Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) is Category 5 according to the United Nation's (2005) Globally Harmonized System (GHS). According to the U.S. EPA, and under the conditions of this study, Difenoconazole/Fludioxonil/ Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20307A) is classified as Toxicity Category III for acute oral toxicity.

This study is classified as acceptable, and satisfies the guideline requirement for an acute oral toxicity study (OPPTS 870.1100; OECD 425) in the rat.

I. MATERIALS AND METHODS

A. Materials:

Test Material/Substance:	Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A)
Description/Appearance:	Blue liquid
Lot/Batch number:	680172
Storage Condition:	Room temperature
Purity:	Difenoconazole: 1.27 (%wt/wt) or 16.5 g/L Fludioxonil: 0.13 (%wt/wt) or 1.69 g/L Thiamethoxam: 20.9 (%wt/wt) or 272 g/L Metalaxyl-M: 0.41 (%wt/wt) or 5.34 g/L Sedaxane: 0.26 (%wt/wt) or 3.39 g/L

Test Material/Substance:	Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A)
CAS#:	Difenoconazole: 119446-68-3; Fludioxonil: 131341-86-1; Thiamethoxam: 153719-23-4; Metalaxyl-M (Mefenoxam):70630-17-0 Sedaxane: 874967-67-6
Vehicle:	None (administered as received)
Positive Control:	None
Stability of test compound:	table for duration of testing

Test Animals:

Species:	Rat
Strain:	Sprague-Dawley derived, albino
Age/weight at dosing:	9-10 weeks / 173-198 grams
Source:	Harlan Laboratories, Inc.
Housing:	Housed singly in suspended steel cages with mesh floors.
Acclimation period:	7-15 days
Diet:	Harlan Teklad Global 16% Protein Rodent Diet® #2016. Free access to food except during fasting.
Water:	Filtered tap water (*ad libitum).*
Environmental conditions	Temperature: 19-22°C Humidity: 30-49% Air changes: 13 and 14/hour Photoperiod: 12 hours light / 12 hours dark

B. Study Design and Methods:

1. Study Experimental dates - Start: February 26, 2013 End: April 3, 2013

2. Animal assignment and treatment

Prior to dosing, test animals were weighed and fasted overnight. On the day of dosing the respective test substance concentrations (based on animal body weights and the density of the test substance) were administered to test animals via a stainless steel ball-tipped gavage needle attached to a syringe. Animals were observed for clinical signs, with particular attention to the observation of salivation, convulsions, tremors, diarrhea, and coma, for several hours following dosing and daily for 14 days or until death. Animals were weighed prior to dosing and again on

study day 7 and 14. Surviving animals were euthanized following the 14 day observation. Gross necropsies included an examination of the tissues and organs of the thoracic and abdominal cavities.

II. RESULTS

All animals survived the 175 and 550 mg/kg bw concentrations. No clinical abnormalities were observed at these dose levels. No abnormalities were observed at necropsy. All animals survived the 1750 mg/kg bw concentration. Two animals (2/3) exhibited irregular respiration, hypoactivity and/or hunched posture following dosing. Both recovered by study day 1. No gross abnormalities observed at necropsy at this dose level. At 5000 mg/kg bw all animals (4/4) died within one day of test substance administration. Clinical signs observed at this dose level included irregular respiration, hypoactivity and abnormal posture. At necropsy, decedents exhibited a discoloration of the intestines and/or a distended stomach filled with a blue fluid.

III. DISCUSSION

Investigator's Conclusions: The acute median lethal oral dose (LD_{50}) of Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) is estimated to be 3129 mg/kg bw. EPA Toxicity Category III.

Reviewer's Conclusions: Agree with the study author. Based on the conditions of this study the acute median lethal oral dose (LD_{50}) of Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) is estimated to be 3129 mg/kg bw. Difenoconazole/ Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) is placed in Category 5 according to the United Nation's (2005) Globally Harmonized System (GHS). According to the U.S. EPA, and under the conditions of this study, Difenoconazole/Fludioxonil/ Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) is classified as Toxicity Category III for acute oral toxicity.

This study is classified as acceptable, and satisfies the guideline requirement for an acute oral toxic class study (OPPTS 870.1100; OECD 425) in the rat.

Deficiencies: None

B.6.11.2: **IIIA 7.1.2; 4.6.2**

Study type: Acute Dermal Toxicity – Rat

Guidelines: U.S. EPA - OPPTS 870.1200; OECD 402

Test Material: (Purity) Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/ Sedaxane FS (A20477A):

Difenoconazole: 1.27 (%wt/wt) or 16.5 g/L
Fludioxonil: 0.13 (%wt/wt) or 1.69 g/L
Thiamethoxam: 20.9 (%wt/wt) or 272 g/L
Metalaxyl-M: 0.41 (%wt/wt) or 5.34 g/L
Sedaxane: 0.26 (%wt/wt) or 3.39 g/L

Synonyms: Helix Vibrance

Citation: Durando, J. (2013) Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) - Acute Dermal Toxicity in Rats: Final Report. Project Number: TK0068474 36006. Unpublished study prepared by Eurofins/Product Safety Laboratories. 19p. MRID 49120109

Sponsor: Syngenta Crop Protection, LLC
P.O. Box 18300, 410 Swing Road
Greensboro, NC 27419-8300

Compliance: Signed and dated GLP, Quality Assurance, and Data Confidentiality statements were provided.

EXECUTIVE SUMMARY

In an acute dermal toxicity study (MRID 49120109), 5 male and 5 female Sprague-Dawley derived, albino rats (8-9 weeks of age) were dermally exposed to a single application of Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) [Difenoconazole: 1.27 (%wt/wt) or 16.5 g/L; Fludioxonil: 0.13 (%wt/wt) or 1.69 g/L; Thiamethoxam: 20.9 (%wt/wt) or 272 g/L; Metalaxyl-M: 0.41 (%wt/wt) or 5.34 g/L; Sedaxane: 0.26 (%wt/wt) or 3.39; Blue liquid]. A dose of 5000 mg/kg bw was applied to a clipped area of test animals and covered with a gauze patch and other binding materials for 24 hours. Animals were observed for clinical abnormalities, dermal irritation and body weight changes for 14 days following application.

All survived and gained bodyweight. Dermal irritation was observed at the dose site of 4/5 males and 4/5 females, resolving by study day 6. Additionally, a faint blue stain was observed at the dose site was observed in all males and females. No other clinical findings or dermal irritation were observed. No gross abnormalities were observed at necropsy.

The acute median lethal dermal dose (LD_{50}) of Difenoconazole/Fludioxonil/Thiamethoxam/ Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) was demonstrated to be greater than 5000 mg/kg bodyweight. Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/ Sedaxane FS (A20307A) is uncategorized according to the United Nation's (2005) Globally Harmonized System (GHS). According to the U.S. EPA, and under the conditions of this study, Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) is classified as Toxicity Category IV for acute dermal toxicity.

This study is classified as acceptable, and satisfies the guideline requirement for an acute dermal toxicity study (OPPTS 870.1200; OECD 402) in the rat.

II. MATERIALS AND METHODS

B. Materials:

Test Material/Substance:	Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A)
Description/Appearance:	Blue liquid
Lot/Batch number:	680172
Storage Condition:	Room temperature
Purity:	Difenoconazole: 1.27 (%wt/wt) or 16.5 g/L Fludioxonil: 0.13 (%wt/wt) or 1.69 g/L Thiamethoxam: 20.9 (%wt/wt) or 272 g/L Metalaxyl-M: 0.41 (%wt/wt) or 5.34 g/L Sedaxane: 0.26 (%wt/wt) or 3.39 g/L
CAS#:	Difenoconazole: 119446-68-3; Fludioxonil: 131341-86-1 Thiamethoxam: 153719-23-4; Metalaxyl-M (Mefenoxam): 70630-17-0 Sedaxane: 874967-67-6
Vehicle:	None (administered as received)
Positive control:	None
Stability of test compound:	Stable for duration of testing

Test Animals:

Species:	Rat
Strain:	Sprague-Dawley derived, albino singly

Test Animals:

Age/weight at dosing:	8-9 weeks /males 196-240g; females 171-190g
Source:	Harlan Laboratories, Inc.
Housing:	Housed singly in suspended steel cages with mesh floors.
Acclimation period:	5 days
Diet:	Harlan Teklad Global 16% Protein Rodent Diet® #2016. Free access to food.
Water:	Filtered tap water (*ad libitum).*
Environmental conditions	Temperature: 19-22°C Humidity: 40-53% Air changes: 11 and 13/hour Photoperiod: 12 hours light / 12 hours dark

B. Study Design and Methods:

1. Study Experimental dates - Start: February 13, 2013 End: March 18, 2013

2. Animal assignment and treatment

On the day prior to study initiation the dorsal and trunk area of test animals was clipped. On the day of study initiation a 5000 mg/kg dose of the test substance was applied evenly to a 2 x 3 inch area (approximately 10% body surface area) and covered with a gauze pad. The gauze pad and trunk of the animal was wrapped with tape to reduce movement of the gauze pad and decrease test substance loss. After 24 hours all binding materials were removed and the test sites washed to remove any residual test substance. Animals were observed for clinical signs, with particular attention to the observation of salivation, convulsions, tremors, diarrhea, and coma, for several hours following dosing and daily for 14 days or until death. Animals were weighed prior to dosing and again on study day 7 and 14 or following death. Animals were euthanized following the 14 day observation. Gross necropsies of the animals included an examination of the tissues and organs of the thoracic and abdominal cavities.

II. RESULTS

All survived and gained bodyweight. Dermal irritation was observed at the dose site of 4/5 males and 4/5 females, resolving by study day 6. Additionally, a faint blue stain was observed at the dose site was observed in all males and females. No other clinical findings or dermal irritation were observed. No gross abnormalities were observed at necropsy.

III. DISCUSSION

Investigator's Conclusions: The acute median lethal dermal dose (LD_{50}) of Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) was demonstrated to be greater than 5000 mg/kg bw. EPA Toxicity Category IV.

Reviewer's Conclusions: Agree with the study author. Based on the conditions of this study the acute median lethal dermal dose (LD_{50}) of Difenoconazole/Fludioxonil/Thiamethoxam/ Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20307A) is greater than 5000 mg/kg bw. This equates to Category IV according to the U.S. EPA, or is uncategorized according to the United Nation's (2005) Globally Harmonized System (GHS).

This study is classified as acceptable, and satisfies the guideline requirement for an acute dermal toxicity study (OPPTS 870.1200; OECD 402) in the rat.

Deficiencies: None

B.6.11.3: **IIIA 7.1.3; 4.6.3**

Study type: Acute 4 Hour (Nose Only) Inhalation Toxicity – Rat

Guidelines: U.S. EPA - OPPTS 870.1300; OECD 403

Test Material: (Purity) Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/ Sedaxane FS (A20477A):

Difenoconazole: 1.27 (%wt/wt) or 16.5 g/L
Fludioxonil: 0.13 (%wt/wt) or 1.69 g/L
Thiamethoxam: 20.9 (%wt/wt) or 272 g/L
Metalaxyl-M: 0.41 (%wt/wt) or 5.34 g/L
Sedaxane: 0.26 (%wt/wt) or 3.39 g/L

Synonyms: Helix Vibrance

Citation: Durando, J. (2013) Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) - Acute Inhalation Toxicity in Rats: Final Report. Project Number: TK0068476, 36007. Unpublished study prepared by Eurofins/Product Safety Laboratories. 26p. MRID 49120110

Sponsor: Syngenta Crop Protection, LLC
P.O. Box 18300, 410 Swing Road
Greensboro, NC 27419-8300

Compliance: Signed and dated GLP, Quality Assurance, and Data Confidentiality statements were provided.

EXECUTIVE SUMMARY

In this acute inhalation toxicity study, 5 male and 5 female Sprague-Dawley derived, albino rats (8 weeks of age) were exposed "nose-only" via the inhalation route for four hours and 3 minutes to Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) [Difenoconazole: 1.27 (%wt/wt) or 16.5 g/L; Fludioxonil: 0.13 (%wt/wt) or 1.69 g/L; Thiamethoxam: 20.9 (%wt/wt) or 272 g/L; Metalaxyl-M: 0.41 (%wt/wt) or 5.34 g/L; Sedaxane: 0.26 (%wt/wt) or 3.39; Blue liquid] at gravimetric concentrations of 2.55 mg. Animals were observed for clinical abnormalities during exposure and for 14 days following exposure. Body weight measurements were conducted prior to exposure and again on study days 1, 3, 7 and 14. Animals were euthanized on study day 14. Gross necropsies were performed on all animals.

All survived. All exhibited abnormal respiration following exposure, recovering by study day 3. Three males (3/5) and 2 females (2/5) lost or failed to gain body weight by study day 1, however all exceeded their initial bodyweight by study termination. No gross abnormalities were observed at necropsy. The mean MMAD and GSD were 3.26 µm and 2.71 respectively for this exposure.

The acute median lethal inhalation concentration (LC_{50}) of Difenoconazole/Fludioxonil/ Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) was demonstrated to be greater than 2.55 mg/L and consequently in Category 4 according to the United Nation's (2005) Globally Harmonized System (GHS). According to the U.S. EPA this product is category IV for acute inhalation toxicity.

This acute inhalation study is classified as acceptable, and satisfies the guideline requirement for an acute inhalation toxicity study (OPPTS 870.1300; OECD 403) in the rat.

MATERIALS AND METHODS

C. Materials:

Test Material/Substance:	Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A)
Description/Appearance:	Blue liquid
Lot/Batch number:	680172
Storage Condition:	Room temperature
Purity:	Difenoconazole: 1.27 (%wt/wt) or 16.5 g/L Fludioxonil: 0.13 (%wt/wt) or 1.69 g/L Thiamethoxam: 20.9 (%wt/wt) or 272 g/L Metalaxyl-M: 0.41 (%wt/wt) or 5.34 g/L Sedaxane: 0.26 (%wt/wt) or 3.39 g/L
CAS#:	Difenoconazole: 119446-68-3; Fludioxonil: 131341-86-1; Thiamethoxam: 153719-23-4; Metalaxyl-M (Mefenoxam): 70630-17-0 Sedaxane: 874967-67-6
Vehicle:	None (administered as received)
Positive control:	None
Stability of test compound:	Stable for duration of testing

Test Animals:

Species:	Rat
Strain:	Sprague-Dawley derived, albino
Age/weight at dosing:	8 weeks /males 211-225g; females 155-163g

Test Material/Substance:	Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A)
Source:	Harlan Laboratories, Inc.
Housing:	Housed singly in suspended steel cages with mesh floors.
Acclimation period:	8 days
Diet:	Harlan Teklad Global 16% Protein Rodent Diet® #2016. Free access to food except during exposure.
Water:	Filtered tap water (*ad libitum).*
Environmental conditions	Temperature: 19-23°C Humidity: 41-48% Air changes: 11 and 13/hour Photoperiod: 12 hours light / 12 hours dark

B. Study Design and Methods:

1. Study Experimental dates - Start: February 21, 2013 End: March 7, 2013

2. Animal assignment and treatment:
5 male and ten female Sprague-Dawley derived, albino rats (8 weeks of age) were exposed "nose-only" via the inhalation route for four hours and 3 minutes to Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) at a gravimetric concentration of 2.55 mg. Animals were observed for mortality during exposure. Following exposure, animals were observed at least once daily for clinical signs, with particular attention to the observation of salivation, convulsions, tremors, diarrhea, and coma. Animals were weighed prior to initial exposure and again on study days 1, 3, 7 and 14. Animals were euthanized on study day 14. Gross necropsies were performed on all animals and included an examination of the tissues and organs of the thoracic and abdominal cavities.

II. RESULTS
All survived. All exhibited abnormal respiration following exposure, recovering by study day 3. Three males (3/5) and 2 females (2/5) lost or failed to gain body weight by study day 1, however all exceeded their initial bodyweight by study termination. No gross abnormalities were observed at necropsy. The mean MMAD and GSD were 3.26 µm and 2.71 respectively for this exposure.

The acute median lethal inhalation concentration (LC_{50}) of Difenoconazole/Fludioxonil/ Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) was demonstrated to be greater than 2.55 mg/L and consequently in Category 4 according to the United Nation's (2005) Globally Harmonized System (GHS). According to the U.S. EPA this product is category IV for acute inhalation toxicity.

III. CONCLUSIONS/DISCUSSION

Investigator's Conclusions: The study author states that the LC_{50} of Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) is greater than 2.55 mg/L in male and female rats.

Reviewer's Conclusions: Agree with the study author. Under the conditions of this study the acute inhalation LC_{50} for Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) is greater than 2.55 mg/L in male and female rats; and consequently in Category 4, according to the United Nation's (2005) Globally Harmonized System (GHS). According to the U.S. EPA this product is category IV for acute inhalation toxicity.

This acute inhalation study is classified as acceptable, and satisfies the guideline requirement for an acute inhalation toxicity study (OPPTS 870.1300; OECD 403) in the rat.

Deficiencies/Deviations: None

B.6.11.4: **IIIA 7.1.4; 4.6.4**

Study type: Primary Skin Irritation – Rabbit

Guidelines: U.S. EPA - OPPTS 870.2500; OECD 404

Test Material: (Purity) Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/ Sedaxane FS (A20477A):

Difenoconazole: 1.27 (%wt/wt) or 16.5 g/L
Fludioxonil: 0.13 (%wt/wt) or 1.69 g/L
Thiamethoxam: 20.9 (%wt/wt) or 272 g/L
Metalaxyl-M: 0.41 (%wt/wt) or 5.34 g/L
Sedaxane: 0.26 (%wt/wt) or 3.39 g/L

Synonyms: Helix Vibrance

Citation: Durando, J. (2013) Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) - Primary Skin Irritation in Rabbits: Final Report. Project Number: TK0068472, 36009. Unpublished study prepared by Eurofins/Product Safety Laboratories. 18p. MRID 49120111

Sponsor: Syngenta Crop Protection, LLC
P.O. Box 18300, 410 Swing Road
Greensboro, NC 27419-8300

Compliance: Signed and dated GLP, Quality Assurance, and Data Confidentiality statements were provided.

EXECUTIVE SUMMARY

In a primary dermal irritation study (MRID 49120111), 3 young adult male New Zealand Albino rabbits were dermally exposed to a 0.5mL application of Difenoconazole/Fludioxonil/ Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) [Difenoconazole: 1.27 (%wt/wt) or 16.5 g/L; Fludioxonil: 0.13 (%wt/wt) or 1.69 g/L; Thiamethoxam: 20.9 (%wt/wt) or 272 g/L; Metalaxyl-M: 0.41 (%wt/wt) or 5.34 g/L; Sedaxane: 0.26 (%wt/wt) or 3.39; Blue liquid] for a period of 4 hours. The test substance was applied to a clipped area of test animals and covered with a gauze patch and other binding materials. Animals were observed for erythema, edema or other signs of dermal irritation or corrosion at 1, 24, 48 and 72 hours after patch removal.

No erythema or edema was observed. No other clinical signs observed. The Primary Dermal Irritation Index for Difenoconazole/Fludioxonil/ Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) is 0.0.

Based on study results Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) is unclassified according to the United Nation's (2005) Globally Harmonized System (GHS). According to the U.S. EPA this product is category IV for primary dermal irritation

This study is classified as acceptable, and satisfies the guideline requirement for the primary skin irritation study (OPPTS 870.2500; OECD 404) in the rabbit.

I. MATERIALS AND METHODS

A. Materials:

Test Material/Substance:	Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A)
Description/Appearance:	Blue liquid
Lot/Batch number:	680172
Storage Condition:	Room temperature
Purity:	Difenoconazole: 1.27 (%wt/wt) or 16.5 g/L Fludioxonil: 0.13 (%wt/wt) or 1.69 g/L Thiamethoxam: 20.9 (%wt/wt) or 272 g/L Metalaxyl-M: 0.41 (%wt/wt) or 5.34 g/L Sedaxane: 0.26 (%wt/wt) or 3.39 g/L
Stability of test compound:	Stable for duration of testing

Test Animals:

Species:	Rabbit
Strain:	New Zealand albino
Age/weight at dosing:	Young adult males (specific age and weigh not provided)
Source:	Robinson Services, Inc.
Housing:	Housed singly in suspended steel cages with mesh floors.
Acclimation period:	6 days
Diet:	Harlan Teklad Global High Fiber Rabbit Diet® #2031, approximately 150g/day.
Water:	Filtered tap water (*ad libitum*).

Test Animals:

Environmental conditions

Temperature: 19-21°C
Humidity: 33-40%
Air changes: 13/hour
Photoperiod: 12 hours light / 12 hours dark

B. Study Design and Methods:

1. Study Experimental dates - Start: February 26, 2013 End: March 1, 2013

2. Animal assignment and treatment:

On the day prior to study initiation the dorsal and trunk area of test animals was clipped. On the day of study initiation the test substance was applied to a clipped area of the dorsal area and trunk of the test animals and covered with a 1 inch x 1 inch gauze patch. The gauze pad and trunk of the animal was wrapped with tape to reduce movement of the gauze pad and decrease test substance loss. Elizabethan collars were placed on each rabbit and they were returned to their cages.

After 4 hours all binding materials were removed and the test sites washed to remove any residual test substance. Animals were observed for erythema, edema, or other signs of dermal irritation or corrosion at 1, 24, 48 and 72 hours after patch removal.

II. RESULTS

No erythema or edema was observed. No other clinical signs observed. The Primary Dermal Irritation Index for Difenoconazole/Fludioxonil/ Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) is 0.0.

III. CONCLUSIONS/DISCUSSION

Investigator's Conclusions:

Based on the conditions of the study and the degree of dermal irritation observed, the study author determined that Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) was non-irritating to the skin and designated Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) as EPA Toxicity Category IV for primary dermal irritation.

Reviewer's Conclusions:

Agree with the study author. Under the conditions of this study, and in accordance with the Globally Harmonized System (GHS) criteria, the test substance is uncategorized for primary skin irritation. According to the U.S. EPA, Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M

(Mefenoxam)/Sedaxane FS (A20477A) is considered "non-irritating" and classified in Toxicity Category IV for primary dermal irritation.

This study is classified as acceptable, and satisfies the guideline requirement for the primary skin irritation study (OPPTS 870.2500; OECD 404) in the rabbit.

Deficiencies/Deviations: None

B.6.11.5: IIIA 7.1.5; 4.6.5

Study type: Primary Eye Irritation – Rabbit

Guidelines: U.S. EPA - OPPTS 870.2400; OECD 405

Test Material: (Purity) Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/ Sedaxane FS (A20477A):

Difenoconazole: 1.27 (%wt/wt) or 16.5 g/L
Fludioxonil: 0.13 (%wt/wt) or 1.69 g/L
Thiamethoxam: 20.9 (%wt/wt) or 272 g/L
Metalaxyl-M: 0.41 (%wt/wt) or 5.34 g/L
Sedaxane: 0.26 (%wt/wt) or 3.39 g/L

Synonyms: Helix Vibrance

Citation: Durando, J. (2013) Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) - Primary Eye Irritation in Rabbits: Final Report. Project Number: TK0068475, 36008. Unpublished study prepared by Eurofins/Product Safety Laboratories. 20p. MRID 49120112

Sponsor: Syngenta Crop Protection, LLC
P.O. Box 18300, 410 Swing Road
Greensboro, NC 27419-8300

Compliance: Signed and dated GLP, Quality Assurance, and Data Confidentiality statements were provided.

EXECUTIVE SUMMARY

In a primary eye irritation study (MRID 49120112), the eyes of 3 female young adult New Zealand White rabbits were exposed to 0.1 mL of Difenoconazole/Fludioxonil/ Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) [Difenoconazole: 1.27 (%wt/wt) or 16.5 g/L; Fludioxonil: 0.13 (%wt/wt) or 1.69 g/L; Thiamethoxam: 20.9 (%wt/wt) or 272 g/L; Metalaxyl-M: 0.41 (%wt/wt) or 5.34 g/L; Sedaxane: 0.26 (%wt/wt) or 3.39; Blue liquid]. Animals were observed for ocular irritation at 1, 24, 48, and 72 hours post instillation. A fluorescein dye was used at the 24 hour instillation to verify the absence of damage.

No corneal opacity or iritis was observed. Grade 2 redness was observed in 3/3 animals at the one hour observation. All scores were zero by the 48 hour observation. A blue staining on the fur around the eye was observed in all animals (3/3) from the 1 hour through the 72 hour observation. Maximum Mean Total Score is 4.0.

Based on study results Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) is uncategorized according to the United Nation's (2005) Globally Harmonized System (GHS). According to the U.S. EPA this product is category IV for primary eye irritation

This study is classified as acceptable, and satisfies the guideline requirement for the primary eye irritation study (OPPTS 870.2400; OECD 405) in the rabbit.

I. MATERIALS AND METHODS

A. Materials:

Test Material/Substance:	Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A)
Description/Appearance:	Blue liquid
Lot/Batch number:	680172
Storage Condition:	Room temperature
Purity:	Difenoconazole: 1.27 (%wt/wt) or 16.5 g/L Fludioxonil: 0.13 (%wt/wt) or 1.69 g/L Thiamethoxam: 20.9 (%wt/wt) or 272 g/L Metalaxyl-M: 0.41 (%wt/wt) or 5.34 g/L Sedaxane: 0.26 (%wt/wt) or 3.39 g/L
CAS#:	Difenoconazole: 119446-68-3; Fludioxonil: 131341-86-1; Thiamethoxam: 153719-23-4; Metalaxyl-M (Mefenoxam): 70630-17-0 Sedaxane: 874967-67-6
Vehicle:	None (administered as received)
Positive control:	None
Stability of test compound:	Stable for duration of testing

<u>Test Animals:</u>

Species:	Rabbit
Strain:	New Zealand Albino
Age/weight at dosing:	Young adult (specific age and weight not provided)
Source:	Robinson Services, Inc.
Housing:	Housed singly in suspended steel cages with mesh floors.

Test Animals:

Acclimation period:	5 days
Diet:	Harlan Teklad Global High Fiber Rabbit Diet® #2031, approximately 150g/day.
Water:	Filtered tap water (*ad libitum*).
Environmental conditions	Temperature: 19-20°C Humidity: 30-47% Air changes: 12/hour Photoperiod: 12 hours light / 12 hours dark

B. Study Design and Methods:

1. Study Experimental dates - Start: March 11, 2013 End: March 14, 2013

2. Animal assignment and treatment:

Prior to study initiation, the eyes of test subjects were examined for eye irritation through the use of a white light and a fluorescein dye procedure. On the day of study initiation, animals received 2-3 drops of ocular anesthetic in both the treated and control eyes prior to test substance instillation. After anesthetic instillation, the lower lid of the right eye of each test animal was pulled away from the eyeball and 0.1 mL of the test substance was instilled. After test substance instillation, the eyelids were held together for approximately 1 second to limit test article loss. Animals were observed for ocular irritation at 1, 24, 48, and 72 hours post instillation. A fluorescein dye was used at the 24 hour instillation to verify the absence of damage.

II. RESULTS

No corneal opacity or iritis was observed. Grade 2 redness was observed in 3/3 animals at the one hour observation. All scores were zero by the 48 hour observation. A blue staining on the fur around the eye was observed in all animals (3/3) from the 1 hour through the 72 hour observation. Maximum Mean Total Score is 4.0.

III. CONCLUSIONS/DISCUSSION

Investigator's Conclusions:

Based on the conditions of the study and the degree of ocular irritation observed, the study author determined that Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) was slightly irritating to the eye and designated Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) as EPA Toxicity Category IV for primary eye irritation.

Reviewer's Conclusions:

The reviewer agrees with the study author's conclusions. Under the conditions of this study, Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) is uncategorized in accordance with the Globally Harmonized System (GHS) criteria. According to the U.S. EPA, Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) is considered "minimally irritating" and classified in Toxicity Category IV.

This study is classified as acceptable, and satisfies the guideline requirement for the primary eye irritation study (OPPTS 870.2400; OECD 405) in the rabbit.

Deficiencies/Deviations: None

B.6.11.6: **IIIA 7.1.6; 4.6.6**

Study type: Skin Sensitization Study via the Local Lymph Node Assay - Mice

Guidelines: U.S. EPA - OPPTS 870.2600; OECD 429

Test Material: **(Purity)** Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/ Sedaxane FS (A20477A):

Difenoconazole: 1.27 (%wt/wt) or 16.5 g/L
Fludioxonil: 0.13 (%wt/wt) or 1.69 g/L
Thiamethoxam: 20.9 (%wt/wt) or 272 g/L
Metalaxyl-M: 0.41 (%wt/wt) or 5.34 g/L
Sedaxane: 0.26 (%wt/wt) or 3.39 g/L

Synonyms: Helix Vibrance

Citation: Durando, J. (2013) Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) - Local Lymph Node Assay (LLNA) in Mice: Final Report. Project Number: TK0068473, 36010. Unpublished Study prepared by Eurofins/Product Safety Laboratories. 29p. MRID 49120113

Sponsor: Syngenta Crop Protection, LLC
P.O. Box 18300, 410 Swing Road
Greensboro, NC 27419-8300

Compliance: Signed and dated GLP, Quality Assurance, and Data Confidentiality statements were provided.

EXECUTIVE SUMMARY

In a dermal sensitization study (MRID 49120113) with of Difenoconazole/Fludioxonil/ Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) [Difenoconazole: 1.27 (%wt/wt) or 16.5 g/L; Fludioxonil: 0.13 (%wt/wt) or 1.69 g/L; Thiamethoxam: 20.9 (%wt/wt) or 272 g/L; Metalaxyl-M: 0.41 (%wt/wt) or 5.34 g/L; Sedaxane: 0.26 (%wt/wt) or 3.39; Blue liquid], 33 female CBA/J mice were tested for a sensitization response using the Local Lymph Node Assay Procedure. Based on an initial screening, test animals received applications of undiluted test substance and a 50% and 25% w/w mixture in 1% pluronic L92 surfactant in distilled water. A positive control study was run concurrently with the main test using 25% w/w mixture of HCA in 1% pluronic L92 surfactant in distilled water.

No dermal irritation was observed in vehicle control and test substance (25% test substance, 50% test substance and 100% test substance) animals. Two positive control animals (2/5) exhibited grade 1 erythema at the day 2 observation. All positive control animals (5/5) exhibited grade 1-2 erythema and/or edema at the day 3 and day 6 observations, with desquamation additionally being observed in all animals at the day 6 observation. Two positive control mice, 1 vehicle control mouse and 7 test animals (1/5 25% concentration, 2/5 50% concentration, 4/5 100% concentration) lost or failed to gain weight during the study. Remaining animals gained weight.

Applications of Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) at 25%, 50% and 100% concentration resulted in a Stimulation Index (SI) value of 0.95, 1.20 and 0.98, respectively (An SI value greater than 3 is considered a positive response). The SI value for the positive control substance (25% HCA) was 4.67.

Based on the conditions of this study, Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) is not considered dermal sensitizer.

This study is classified as acceptable. It does satisfy the guideline requirement for a sensitization study (OPPTS 870.2600; OECD 406, 429) in the local lymph node assay in the mouse.

I. MATERIALS AND METHODS

A. Materials:

Test Material/Substance:	Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A)
Description/Appearance:	Blue liquid
Lot/Batch number:	680172
Storage Condition:	Room temperature
Purity:	Difenoconazole: 1.27 (%wt/wt) or 16.5 g/L Fludioxonil: 0.13 (%wt/wt) or 1.69 g/L Thiamethoxam: 20.9 (%wt/wt) or 272 g/L Metalaxyl-M: 0.41 (%wt/wt) or 5.34 g/L Sedaxane: 0.26 (%wt/wt) or 3.39 g/L
Stability of test compound:	Stable for duration of testing

Test Animals:

Species:	Mouse
Strain:	CBA/J
Age/weight at dosing:	Preliminary animals: 11-12 weeks Test and Control animals: 8-9 weeks, 16.8 – 22.3 g
Source:	Harlan Laboratories, Inc.
Housing:	Housed singly in suspended steel cages with mesh floors.
Acclimation period:	7 or 21 days
Diet:	Harlan Teklad Global 16% Protein Rodent Diet® #2016. Free access to food.
Water:	Filtered tap water (*ad libitum).*
Environmental conditions	Temperature: 20-23°C Humidity: 41-49% Air changes: 13/hour Photoperiod: 12 hours light / 12 hours dark

B. Study Design and Methods:

1. Study Experimental dates – February 13, 2013 End: March 5, 2013

2. Animal assignment and treatment:

Preliminary testing was conducted in order to determine the highest test substance concentration that would not elicit excessive systemic toxicity or localized dermal irritation. The preliminary concentrations tested were 100%, 50%, 25% and a vehicle control. The dilutions for the 50% and 25% concentrations were w/w mixtures in 1% pluronic L92 surfactant in distilled water. Two mice per concentration were tested. On the day of preliminary testing, a 25 µL application of vehicle control or test substance dilution was made to the dorsum of both ears of each mouse and spread evenly with the tip of the pipette. This process was repeated on study days 2 and 3. No applications were conducted on study days 4 and 5. On study day 6, based on the degree of dermal irritation observed, the 25%, 50%, and 100% test substance concentrations were selected as the appropriate concentrations to use in the main test.

Twenty five mice were selected for use in the main study (5 vehicle control, 5 positive control and 5 mice for each test substance concentration). Subjects received a dermal application of 25%, 50% or undiluted Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A), vehicle, or 25% HCA to the dorsum of both ears over 3 consecutive days. No applications were conducted on study days 4 and 5. On study day 6, 250 µL of a sterile phosphate buffered saline (PBS; Lot # 051M8212) containing 20 µCi of ^{3H}-methyl

thymidine (Lot # 201207) was intravenously injected into the tail vein of each test animal. At approximately 5 hours after the injection the auricular lymph nodes from test subjects were removed. The lymph nodes from each animal were pooled together and then gently massaged between the frosted ends of two microscopic slides to form a single cell suspension. The slides were rinsed with PBS into a container and the contents of the container transferred to a centrifuge tube and centrifuged for approximately 10 minutes at 1800 rpm, with an RCF (Relative Centrifugal Force) of 498G. This process was repeated twice. "Each time the supernatant was decanted and discarded following each centrifugation. After the second wash, 5 mL of 5% trichloroacetic acid in distilled water was then added to the sediment and the tube was vortexed briefly. The DNA was then precipitated in the 5% TCA at approximately 7.7 – 8.6°C overnight (approximately 18 hours). Following the overnight precipitation of DNA, the tubes were centrifuged again for approximately 10 minutes at 1800 rpm and the supernatant was discarded. The resulting precipitate was resuspended using 1mL of the 5% TCA and transferred to 10 mL of scintillation fluid. Incorporation of ^{3H}-methyl thymidine was measured by B-scintillation counting and expressed as disintegration per minute, minus background dpm".

Animals were observed daily for clinical signs. Observations for dermal irritation were on study days 1, 2, 3, and 6. Subjects were euthanized on study day 6.

II. RESULTS

No dermal irritation was observed in vehicle control and test substance (25% test substance, 50% test substance and 100% test substance) animals. Two positive control animals (2/5) exhibited grade 1 erythema at the day 2 observation. All positive control animals (5/5) exhibited grade 1-2 erythema and/or edema at the day 3 and day 6 observations, with desquamation additionally being observed in all animals at the day 6 observation. Two positive control mice, 1 vehicle control mouse and 7 test animals (1/5 25% concentration, 2/5 50% concentration, 4/5 100% concentration) lost or failed to gain weight during the study. Remaining animals gained weight.

Applications of Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) at 25%, 50% and 100% concentration resulted in a Stimulation Index (SI) value of 0.95, 1.20 and 0.98, respectively (An SI value greater than 3 is considered a positive response). The SI value for the positive control substance (25% HCA) was 4.67.

Based on the conditions of this study, Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) is not considered dermal sensitizer.

III. CONCLUSIONS/DISCUSSION

Investigator's Conclusions:

Based on study results and the system used, the study author has not classified the test substance as a contact dermal sensitizer.

Reviewer's Conclusions:

Agree with the study author. Based on the conditions of this study Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/Sedaxane FS (A20477A) is Unclassified in accordance with the Globally Harmonized System (GHS) criteria. According to the U.S. EPA, Difenoconazole/Fludioxonil/Thiamethoxam/Metalaxyl-M (Mefenoxam)/ Sedaxane FS (A20477A) is not considered to be a dermal sensitizer.

This study is classified as acceptable, and satisfies the guideline requirement for the skin sensitization study (OPPTS 870.2600; OECD 429) in the mouse.

Items of Note/Deficiencies/Deviations: None